

over semiconductor element 1 as required in Claim 19. As shown in Figs. 6 and 7 of Ichiyama, electrodes 8 and bumps 10 both have a circular footprint. They are not the least bit elongated and, therefore, cannot and do not extend anywhere over semiconductor element 1.

Ichiyama does not teach all of the elements of Claim 19 and the Section 102 rejection should be withdrawn, without regard to the following additional distinguishing features.

The Examiner states that leads, terminals and bond pads are not mutually exclusive. While this may be true in the sense that all three of these terms might be used by different authors in different documents to describe the same component, it is not true in the context of determining what Ichiyama discloses relevant to the claimed invention. It is clear from Applicants Specification that bond pads, leads and electrodes, as Applicant has used those terms, are discrete components mutually exclusive of one another. Claim 24, for example, recites bond pads, conductive leads and electrodes as separate elements in the claimed chip package. Similarly, leads 12, bond pads 18 and electrodes 28 are all shown and described as separate components in the Detailed Description and on the drawings. While others might use different terms to describe these same components, it is nevertheless clear that they are not the same thing in the context of this Application and the prior art relied on by the Examiner – they are discrete features mutually exclusive of one another.

In the nomenclature used by Applicants, electrodes 8 in Ichiyama are bond pads, not leads, and Ichiyama clearly distinguishes between these two components. Ichiyama states that "terminals 13 ... are respectively electrically connected to electrodes 8 of a semiconductor element 1." Ichiyama, column 2, lines 65-67. To the extent this passage and the drawings in Ichiyama do not unambiguously teach that electrodes 8 are bond pads rather than leads, the discussion of the prior art by Ichiyama makes this teaching clear. At column 1, lines 17-19, Ichiyama states with reference to Fig. 11 that "[e]lectrodes (not shown) on the semiconductor element 1 are connected to inner leads 6 by bonding wires 7." This passage clearly distinguishes between electrodes and leads. In fact, the terminals 13 in Ichiyama replace the leads and eliminate the need for bonding wires. Ichiyama, column 2, lines 13-16.

This distinction is significant for the reasons noted in the Background section of the present application. Ichiyama's semiconductor package is like the chip scale packages discussed in the Background section of the application at page 2, lines 29-34, except that Ichiyama uses a hard conductor terminal instead of solder balls. One disadvantage of this design, in which the external contact is connected directly to contacts on the surface chip, is that the external contacts and the corresponding contacts on a printed circuit board must be reconfigured each time the chip is made smaller. Application, page 3, lines 5-11. This is one of the problems addressed by the claimed invention in which the external contacts are connected to leads that are electrically connected to the chip, rather than external contacts connected directly to bond pads or other such "electrodes" on the chip.

For all these reasons, Applicants respectfully submit that the electrodes 8 in Ichiyama cannot reasonably be interpreted to be the leads required in Claim 19.

Rejections Under 35 U.S.C. § 103

Claims 23 and 24 were rejected under Section 103 as being obvious over Ichiyama in combination with Ehata.

Claims 23 and 24, like Claim 19, require conductive leads electrically connected to and extending over the chip. For the reasons noted above for Claim 19, Ichiyama also does not teach or suggest this element of Claims 23 and 24.

The foregoing is believed to be a complete response to the outstanding office action.

Respectfully submitted,



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